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ABSTRACT

An aqueous solution that will prevent rust, corrosion and scale on metal surfaces that includes potassium sorbate at percentages above 0.3%. This aqueous solution is effective at pH 4.5. However, its optimum effectiveness as a rust preventive is at pH 6.0 and above. The solution can be produced in a concentrated form and then diluted with tap or deionized water. The potassium sorbate solution has reduced conductivity and reduced oxygen content, both relative to tap water. This is believed to be the technical basis for its ability to prevent rust. Furthermore, the combination of lower conductivity and reduced oxygen content renders the potassium sorbate solution less viable for microbiological growth which prevents the solution from becoming rancid when it is used in re-circulating water systems. This also permits the use of toxic biocides to be eliminated in re-circulatory water systems, which are often used to reduce and control microbiological growth. Also, the solution can be substituted for tap water in water-based products, such as paints, which eliminates the need to plate the cans.